

FILE 10163-181 1072

US ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF PESTICIDES PROGRAMS
REGISTRATION DIVISION (75-767)
WASHINGTON, DC 20460

EPA REGISTRATION NO.
10163-181

10 NOV 1992

TERM OF ISSUANCE

Conditional

NOTICE OF PESTICIDE: REGISTRATION
 REREGISTRATION

(Under the Federal Insecticide, Fungicide,
and Rodenticide Act, as amended)

NAME OF PESTICIDE PRODUCT

Gowan Trifluralin E.C.

NAME AND ADDRESS OF REGISTRANT (Include ZIP code)

Gowan Company
P.O. Box 5569
Yuma, AZ 85366-5569

NOTE: Changes in labeling formula differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above U.S. EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby Registered/Reregistered under the Federal Insecticide, Fungicide, and Rodenticide Act.

A copy of the labeling accepted in connection with this Registration/Reregistration is returned herewith.

Registration is in no way to be construed as an indorsement or approval of this product by this Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is conditionally registered in accordance with FIFRA sec. 3(c)(7)(A) provided that you:

1. Submit and/or cite all data required for registration/reregistration of your product under FIFRA sec. 3(c)(5) when the Agency requires all registrants of similar products to submit such data; and submit acceptable responses required for reregistration of your product under FIFRA section 4.

2. Make the labeling changes listed below before you release the product for shipment:

a. Add the phrase "EPA Registration No. 10163-181."

b. The signal word "WARNING" should be added between the phrase "Hazards to Humans and Domestic Animals" and the specific precautionary statements.

c. Change the last sentence of the Environmental Hazards section to read "Do not contaminate water by disposing of equipment washwaters."

d. Add the appropriate Net Contents statement to the front panel.

e. The company name and address should appear on the label.

ATTACHMENT IS APPLICABLE

SIGNATURE OF APPROVING OFFICIAL

DATE

3. Submit five (5) copies of your final printed labeling before you release the product for shipment. Refer to the A-79 Enclosure for a further description of final printed labeling.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA sec. 6(e). Your release for shipment of the product constitutes acceptance of these conditions.

A stamped copy is enclosed for your records.

Joanna I. Miller
 Product Manager (23)
 Fungicide-Herbicide Branch
 Registration Division (H7505C)

Enclosures

CONCURRENCES							
SYMBOL	H7505C						
SURNAME	D. KENNY						
DATE	11/12/92						

GOWAN TRIFLURALIN E.C.

WEED AND GRASS PREVENTER

A selective, preemergence herbicide for use in ornamentals and vegetable gardens for the control of annual grasses and broadleaf weeds

ACTIVE INGREDIENT: Trifluralin- (a,a,a-trifluoro-2,6-N,N-dipropyl-p-toluidine)	44.5%
INERT INGREDIENTS:	55.5%
TOTAL	100.0%

Contains 4 pounds of active ingredient per gallon. Contains petroleum distillates.

KEEP OUT OF REACH OF CHILDREN

WARNING-AVISO

PRECAUTION AL USUARIO

Si usted no lee ingles, no use este producto hasta que la etiqueta le haya sido explicada ampliamente.

STATEMENT OF PRACTICAL TREATMENT

IF SWALLOWED, call a physician or Poison Control Center. Drink 1 or 2 glasses of water and induce vomiting by touching back of throat with finger, or, if available, by administering syrup of ipecac. Do not induce vomiting or give anything by mouth to an unconscious person.

IF INHALED, remove victim to fresh air. Apply artificial respiration if indicated.

IF IN EYES, flush eyes with plenty of clear water for at least 15 minutes. Get medical attention.

IF ON SKIN, wash with soap and water.

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

Causes substantial but temporary eye injury. Do not get in eyes or on clothing. Wear safety glasses when handling. Wash thoroughly with soap and water after handling. Harmful if swallowed, absorbed through skin, or inhaled. Avoid breathing spray mist. Remove contaminated clothing and wash before reuse.

Do not apply this product in such a manner as to directly or through drift expose workers or other persons. The area being treated must be vacated by unprotected persons.

ACCEPTED
with COMMENTS
in EPA Letter #10163-151

ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Drift or runoff from treatment areas may be hazardous to aquatic organisms in neighboring sites. Do not contaminate water by cleaning of equipment or disposal of waste.

Under the Federal Insecticide, Fungicide, and Rodenticide Act, registration of this pesticide is suspended until 10/16/83-151

PHYSICAL OR CHEMICAL HAZARDS

Do not use or store near heat or open flame.

DIRECTIONS FOR USE

TRIFLURALIN E.C. is a selective preemergence herbicide for the control of annual grasses and broadleaf weeds in nursery stock, ornamental trees, ornamental woody shrubs, ornamental ground cover, roses, established flowers, vegetable gardens and under paved surfaces.

BEST AVAILABLE COPY

It is a violation of federal law to use this product in a manner inconsistent with its labeling.

CHEMIGATION STATEMENT

Do not apply TRIFLURALIN E.C. WEED AND GRASS PREVENTER through any type of irrigation system.

STORAGE AND DISPOSAL

STORAGE: Avoid freezing. Store above 40° F. If frozen, poor weed control may result. Do not store near heat or open flame. Store in original container only. In case of leak or spill, use absorbent materials to contain liquids and dispose of as waste.

PESTICIDE DISPOSAL: Do not contaminate water, food or feed by storage or disposal. Waste resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

CONTAINER DISPOSAL: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

Grasses	
Annual bluegrass	Johnsongrass
Barnyardgrass (Watergrass)	(from seed)
Brombiana	Jungle rice
Bromegrass	Panicum, Fall
Cheat	Panicum, Texas
Crabgrasses:	Sandbur
Foxtail	Sprangletop
Goosegrass	Stinkgrass
Woolly cupgrass	
Broadleaf Weeds	
Carpetweed	Lambsquarters
Chicweed	Pigweed
Florida pusley	Puncturevine
Goosefoot	(Western U.S. only)
Knotweed	Purslane
Kochia	Russian thistle
	Stinging nettle

Note: Trifluralin will not control certain resistant weeds such as Cocklebur, Velvetleaf, Jimsonweed, Ragweed, Venice Mallow and Nutgrass.

GENERAL DIRECTIONS

Trifluralin is a pre-emergence herbicide which is incorporated (mixed) into the soil to provide long-lasting control of annual grasses and broadleaf weeds (see above list). Trifluralin controls weeds by killing their seeds as they germinate. It does not control established weeds.

Incorporation of trifluralin helps assure effective weed control regardless of weather conditions and permits shallow cultivation, rotary hoeing and band hoeing without reducing its weed control activity.

Trifluralin is recommended for use on a wide variety of vegetables, ornamental trees, ornamental groundcovers, shrubs, and flowers. The ornamental species on which trifluralin can be used at recommended rates without damage include those listed in this booklet. Refer to the index for the page numbers of these lists.

Application Directions

Trifluralin E. C. is to be mixed with water and applied as a spray before, or in the same operation as soil incorporation. Apply in 5 to 40 gallons of water per acre (broadcast basis) using any properly calibrated low-pressure boom-type herbicide sprayer that will uniformly apply the spray. Pour the recommended amount of trifluralin for your soil type into the spray tank during the filling operation and mix thoroughly before spraying. Do not apply more than the recommended amount.

Incorporation Directions

Trifluralin must be incorporated into the soil after application to prevent loss of its activity. Spraying and incorporation should be done in the same operation, if possible. Incorporation may be delayed up to 4 hours after application. Variable weed control may result from delayed incorporation if

Trifluralin is applied to a wet, warm soil surface or if the wind velocity is 10 mph. or higher.

The machinery used for incorporation should break up large clods and mix trifluralin thoroughly with the soil. The more thoroughly the trifluralin is mixed with the soil, the more consistent the weed control will be.

Apply and incorporate trifluralin prior to planting new nursery stock liners, ornamentals, trees and woody shrubs, and gladioli. (Gladioli corms less than 1 inch in diameter may be injured by pre-plant applications of trifluralin.)

Trifluralin may also be applied to established plantings by using a directed spray to the soil between the rows and beneath the plants.

Incorporation before planting (pre-plant): Thorough incorporation may be achieved with the following: P. T. O.- driven equipment (tillers, cultivators, hoes) set to cut 2 to 3 inches deep with rotors spaced to provide a clean sweep of the soil; double disc (or double disc with spiketooth harrow in tandem) set to cut 3 to 4 inches deep and operated in two different directions (cross discs) at 4 to 6 mph.; muck treader and other similar disc-type implements set to cut 3 to 4 inches deep and operated twice at 5 to 8 mph.; rolling cultivators set to cut 2 to 4 inches deep and operated twice at 6 to 8 mph.; or a bed conditioner (Do-All) set to cut 2 to 4 inches deep and operated at 4 to 6 mph.

Incorporation after planting (post-plant): Incorporation may be achieved around established plantings by using P. T. O.- driven equipment (tillers, cultivators, hoes) set to cut 2 to 3 inches deep with rotors spaced to provide a clean sweep of the soil, or rolling cultivators set to cut 2 to 4 inches deep and operated twice at 6 to 8 mph. When incorporating trifluralin transplants, new liners, or established plants, the implement should be adjusted so that treated soil is thrown toward and around the plants in the row.

Clean cultivate area to be treated before application since trifluralin will not control established weeds

Shallow incorporation with implements set to cut less than 2 inches deep may result in erratic weed control. Do not use spiketooth or springtooth harrows alone for incorporation.

Broadcast (Overall) Application Rates for Soil Incorporation Only

Coarse Soils	Sand and sandy loam 1 pint per acre (1/2 pound active)
Medium Soils	Loam, silt loam and silt 1 1/2 pints per acre (3/4 pound active)
Fine Soils	Clay loam, silty clay and clay 2 pints per acre (1 pound active)

For band applications, use the following formula to figure the proportionate amount:

$$\frac{\text{band width in inches}}{\text{row width in inches}} \times \text{recommended broadcast rate} = \text{amount to apply per acre on band}$$

Trifluralin is not recommended on muck soils.

Surface Application and Water Incorporation to Ornamental Groundcover Planting

Add trifluralin to clean water in the spray tank during the filling operation. Agitate thoroughly prior to spraying. Apply in 5 to 40 gallons of water per acre using any properly calibrated low pressure herbicide sprayer that will uniformly apply the spray mixture. A one-half inch rain or its equivalent in sprinkler irrigation must be received within 24 hours or poor weed control will result.

Application Rates—Groundcovers Only

Apply 1 gallon of trifluralin per acre or 3 ounces per 1,000 sq ft of groundcover area.

Ornamental Species

Common Name	Scientific Name
Woody Shrubs	
Andromeda, Japanese	<i>Pieris japonica</i>
Arborvitae, American	<i>Thuja occidentalis</i>
Azalea	<i>Rhododendron</i> spp.
Barberry, Japanese	<i>Berberis thunbergii</i>
Barberry, Mento	<i>Berberis mentorensis</i>
Boxwood, Common	<i>Buxus sempervirens</i>
Boxwood, Harlands	<i>Buxus harlandi</i>
Boxwood, Littleleaf	<i>Buxus microphylla</i>
Camellia, Japanese	<i>Camellia japonica</i>
Camellia, Sasanqua	<i>Camellia sasanqua</i>
Cherry laurel, American	<i>Prunus caroliniana</i>
Cinquefoil	<i>Potentilla</i> spp.
Cleyera, Japanese	<i>Cleyera japonica</i>
Cotoneaster, Cranberry	<i>Cotoneaster coccinea</i>
Cotoneaster, Zabel	<i>Cotoneaster zabelii</i>
Deutzia	<i>Deutzia</i> spp.
Elaeagnus, Silverberry	<i>Elaeagnus pungens</i>
Euonymus, Spreading	<i>Euonymus alatus</i>
Euonymus, Winged	<i>Euonymus alatus</i>
Euonymus, Wintergreen	<i>Euonymus japonicus</i>
Firethorn	<i>Pyracantha</i> spp.
Forsythia	<i>Forsythia</i> spp.
Guava, Pineapple	<i>Feijoa sellowiana</i>
Holly	<i>Ilex</i> spp.
Honeysuckle	<i>Lonicera</i> spp.
Indiahawthorn	<i>Raphiolepis indica</i>
Juniper	<i>Juniperus</i> spp.
Laurel, Mountain	<i>Kalmia latifolia</i>
Lilac, Common	<i>Syringa vulgaris</i>
Mockorange	<i>Philadelphus</i> spp.
Pittosporum, Japanese	<i>Pittosporum tobira</i>
Privet	<i>Ligustrum</i> spp.
Redcedar, Eastern	<i>Juniperus virginiana</i>
Rhododendron	<i>Rhododendron</i> spp.
Spiraea, Vanhoutte	<i>Spiraea vanhouttei</i>
Viburnum	<i>Viburnum</i> spp.
Weigela	<i>Weigela</i> spp.
Willow	<i>Salix</i> spp.
Yew, Anglojap	<i>Taxus media</i>
Yew, Japanese	<i>Taxus cuspidata</i>
Yewpine	<i>Podocarpus macrophyllus</i>

Mixing Directions

Start with a clean spray tank. Fill sprayer 1/2 full with clean water. Add correct quantity of Trifluralin. Close sprayer and shake well to mix Trifluralin. Finish filling sprayer and shake occasionally to keep Trifluralin mixed in the tank.

Ground Application

Apply Trifluralin in 1 to 5 gallons of water per 1,000 square feet on a broadcast basis. Spray uniformly over the top of the soil surface to assure satisfactory weed control.

Incorporation Directions

Mix Trifluralin thoroughly into the soil with a tool or implement that breaks up large clods and distributes the chemical within the soil. The more thoroughly the Trifluralin is mixed within the soil, the more consistent the weed control.

Thoroughly mix Trifluralin in the top 2 to 3 inches of the final seedbed (when the garden is ready for planting), or erratic weed control and/or crop injury may result. Equipment such as a rototiller or rake should be used to mix Trifluralin to the desired 2 to 3 inch depth.

Incorporation Before Planting

Trifluralin must be mixed into the soil within 24 hours after application. You should mix the Trifluralin uniformly into the top 2 to 3 inches of the final seedbed.

Incorporation After Planting

Check specific crop incorporation directions after planting.

Cultivation After Planting

Soil treated with Trifluralin may be shallow cultivated without reducing the weed control activity of Trifluralin. Do not cultivate deeper than the treated soil since this may bring untreated soil to the surface, and poor weed control may result.

Crop Recommendations

These recommendations are given as broadcast rates of Trifluralin per 1,000 square feet. Apply any time after January 1 when soil can be worked and is suitable for good incorporation. Do not use Trifluralin on soils containing more than 10% organic matter. Trifluralin should not be used in areas to be planted with sweet corn or direct seeded cucurbits.

For the Following Crop Grouping, Use the Rate Listed Below.

Apply and incorporate Trifluralin before planting, at planting or immediately after planting unless otherwise indicated.

Broadcast Rates Per 1,000 Square Feet

Gowan Trifluralin E.C.	
Soil Texture	Teaspoons
Coarse	2 1/4
Medium	3 1/2
Fine	4 1/2

Asparagus—Established

Follow recommended soil preparation, application and incorporation procedures for Trifluralin.

Trifluralin can be applied to established asparagus as a single application. Apply Trifluralin to asparagus after ferns are removed but before spear emergence.

Carrot

Celery—(Direct seeded and transplant)

Cole Crops—Transplant (Broccoli, Brussels Sprout, Cabbage and Cauliflower)

Apply and incorporate prior to transplanting only. See next section for direct seeded.

Cucurbits—Postplant Emerged (Cantaloupe, Cucumber and Watermelon)

Apply Trifluralin as a direct spray to the soil between the rows and beneath plants which are in the 3 to 4 true leaf stage.

After applying Trifluralin to the soil, incorporation is necessary to mix the chemical to the 2"-3" desired depth. Optimum weed control will be achieved by moving a portion of the treated soil around the base of the established plants.

Okra

Pepper—Transplant

Apply and incorporate prior to transplanting only.

Potato—(All states except Maine)

Apply and incorporate Trifluralin after planting, before emergence, or immediately following dragoff or after the potato plants have fully emerged.

Mix Trifluralin into the soil so a uniform layer of treated soil covers the bed. Concentrated areas of chemical in the bed may retard potato emergence and cause stem brittleness. If potato plants are already emerged when cultivating, do not totally cover foliage with treated soil. Do not damage potato seed pieces or elongating sprouts with incorporation equipment.

Southern Pea (Before planting only).

Tomato—Transplant

Apply and incorporate prior to transplanting only.

For the Following Crop Grouping, Use the Rate Listed Below.

Apply and incorporate Trifluralin before planting.

Broadcast Rate Per 1,000 Square Feet

Gowan Trifluralin E.C.	
Soil Texture	Teaspoons
Coarse	2 1/4
Medium	3 1/2
Fine	4 1/2

Beans—(Lima Bean and Snap Bean)

Cole Crops—Direct Seeded (Broccoli, Brussels Sprout, Cabbage and Cauliflower)

See above section for transplant.

Greens—(Turnip Greens, Collard, Kale and Mustard Greens)

Green Pea

Gowan Trifluralin E.C. Rate Conversion Chart

Rate Per Thousand Square Feet to Rate Per Acre	
Rate Per 1,000 Square Feet In: Teaspoons	Rate Per Acre: Pints
2 1/4	1
3 1/2	1 1/2
4 1/2	2

Small Sprayer Calibration Technique

Small sprayer calibration can be achieved by following these five simple steps.

1. Fill the sprayer full of clean water
2. Spray as you would normally apply chemicals through the sprayer over the area to be treated.
3. When the sprayer is empty, measure the area treated to determine the number of square feet per sprayer load.
4. After you have calculated the number of square feet per sprayer load, calculate the amount of Trifluralin needed to treat that size area.
5. Refer to the mixing directions on the Trifluralin product label.

SPECIAL PRECAUTIONS

Applied according to directions and under normal growing conditions, Trifluralin will not harm the treated crop. Overapplication may result in crop injury or a soil residue. Uneven application or improper soil incorporation of Trifluralin can result in erratic weed control or crop injury. Seeding dates, cold weather, deep planting, excessive moisture, high salt concentration or drought may weaken crop seedlings and increase the possibility of damage from Trifluralin. Under these conditions, delayed crop development or reduced yields may result.

INHERENT RISKS OF USE

Failure to carefully follow the directions for use of Trifluralin as well as other factors such as seedling disease, cold weather, deep planting, excessive moisture, high salt concentration or drought, may result in unsatisfactory weed control or crop injury. Reduced yields may result under these conditions.

NOTICE ON CONDITIONS OF SALE

Our recommendations for use of this product are based upon tests believed to be reliable. The use of this product being beyond the control of the manufacturer, no guarantee, expressed or implied, is made as to the effects of such or the results to be obtained if not used in accordance with directions or established safe practice. The buyer must assume all responsibility, including injury or damage, resulting from its misuse as such, or in combination with other materials.